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The neutral inlet design used earlier led to erroneous rate constants. No rotational temperature dependence is now observed. The technique suggested for determining rotational temperature dependences remains valid. Keywords: Oxygen/negative; Nitrous oxide

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Erratum: Rotational temperature dependences of gas phase ion–molecule reactions [J. Chem. Phys. 89, 4848 (1988)]

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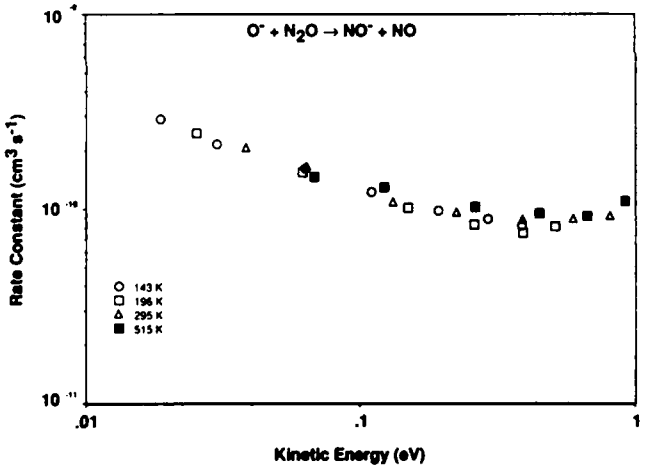

FIG. 1. Rate constants for the reaction of $O^- + N_2O$ vs center of mass kinetic energy at several temperatures.

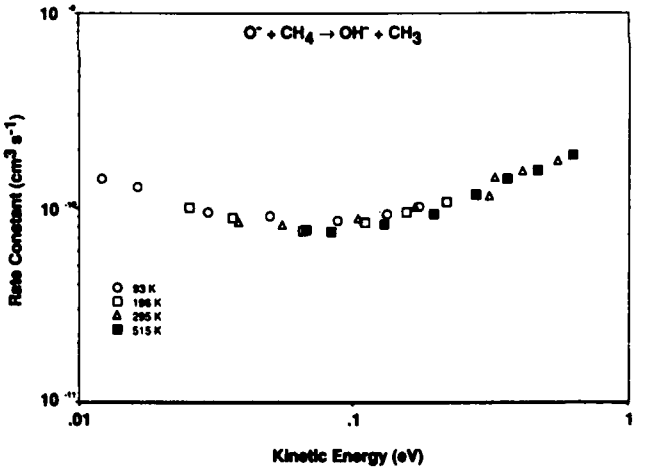

FIG. 2. Rate constants for the reaction of $O^- + CH_4$ vs center of mass kinetic energy at several temperatures.

We have found that the neutral inlet design used in our drift tube in these measurements caused the measured rate constants to be in error, especially at low temperatures. The old inlet is a single tube in which the gas is injected upstream. The new inlet is a ring with eight small holes pointing upstream. The technique reported for determining rotational temperature dependences remains valid. The data from Figs. 1 and 2 are replaced by Figs. 1 and 2 below. In contrast to the original data, the corrected data show no rotational temperature dependence within experimental uncertainty for both reactions. Consequently much of the discussion is rendered invalid. We are uncertain why the finger inlet affected the CH_4 data more than the N_2O data. Future papers will deal with the inlet effect and each of these reactions individually.

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